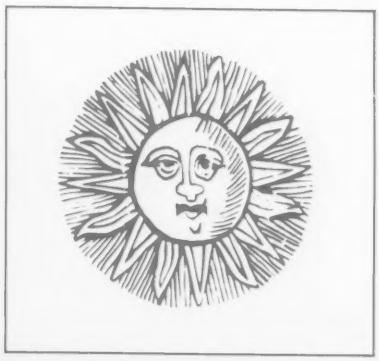
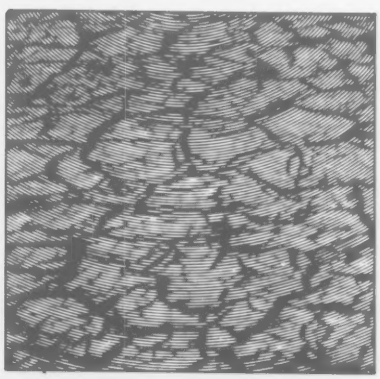
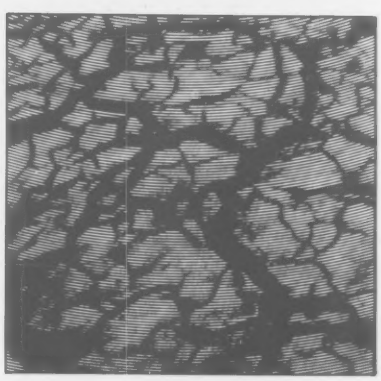
FARM INDEX

U.S. Department of Agriculture
April 1977

Wacky Weather Whops Crops







Outlook

Though spring has arrived, Old Man Winter has left his mark at the supermarket. Thanks to his antics, coupled with skyrocketing coffee prices, the food price talley for first-quarter 1977 may be up 2 percent above that of fourth quarter last year—in part a seasonal rise, but also 2 percent above a year earlier.

Some further price hikes are likely during the summer as meat supplies shrink and consumer demand swells with improving economic conditions. However, by fall, food prices will probably steady, despite prospects of wider marketing spreads . . . if the weather cooperates.

In fact, if the drought is broken this spring and weather works to rather than against the farmer's advantage, this year's food prices could be up by only 4 or 5 percent from last year's, as an annual average. However, if it doesn't, the average could be as much as 6 percent higher.

The drought in the West could cut production of a number of food crops —some fruits and vegetables as well as grain—thus firming up crop prices. Also, continued drought could prompt farmers to slaughter more livestock, resulting in lower meat prices this summer, followed by higher prices later on.

Here's the commodity-by-commodity forecast for this spring, based on mid-March conditions.

Meat: Record-high, first-half red meat supplies to keep retail prices below a year ago. Pork prices to hold relatively steady til summer—well below last year—due to bigger supplies.

Broilers: Prices to creep higher this spring, but averaging well below a year earlier, with a further pickup likely in the summer.

Eggs: Output to climb 1 to 2 percent this spring and summer. Prices to strengthen around Easter, but dropping seasonally thereafter.

Dairy: Retail prices to remain on an even keel until summer.

Fats and oils: Prices to continue firm, reflecting strong U.S. and foreign demand plus uncertainties over 1977 soybean prospects and current small supplies.

Fresh fruit: Consumers to pay more for fruit during the first half of the year. Blame it on bitter winter in Florida and smaller apple stocks.

Fresh vegetables: Prices for several vegetables damaged by the Florida freeze to retreat from record highs as spring harvest gets underway—especially, tomatoes, cucumbers, and peppers. Spring onion crop smaller and later this year, with prices higher.

Processed fruits and vegetables: Smaller stocks of processed noncitrus, skimpier packs of citrus products, and higher processing costs to hold processed fruit prices above year-earlier levels. The same will hold for processed vegetable prices.

Cereal and bakery products: Retail prices to drift moderately higher during first-half 1977.

Sugar: With ample world supplies, prices to remain fairly stable through midyear.

Coffee, tea, and cocoa: Tighter world tea supplies and rising coffee prices to push up tea prices, but much less than for coffee. Retail prices for chocolate products to advance further.

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Agriculture Internationale

The grain dealer of ancient times simply loaded his wheat or other cargo on a boat and sailed down the Nile or around the Mediterranean til he found a willing barterer. Then he'd head home with a load of spices, figs, perfume, dried fish, or other goods.

Today, international trade is a lot more complicated. There are multilateral trade negotiations, most-favored-nation clauses, trade acts, U.S.-U.S.S.R. grain agreements, EC variable levies and preferential agreements, the International Wheat Council, UNCTAD, PL-480, GATT, OECD . . .

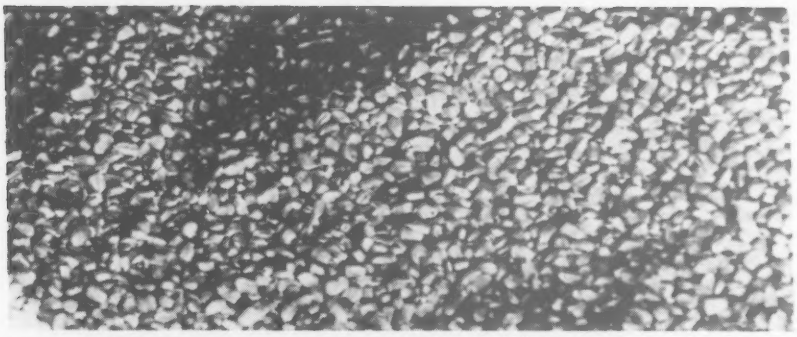
From the U.S. viewpoint, then, what does all this mean for American agriculture, and ultimately, the American farmer?

U.S. trade act. Let's start with the U.S.'s own Trade Act of 1974. This act gives the President (with certain checks by Congress) the power to enter into trade negotiations and agreements.

Basically, the act is designed to:

- Foster economic growth and strengthen economic relations between the U.S. and foreign countries.
- Harmonize, reduce, and eliminate barriers to trade.
- Establish fairness and equity in international trade relations.
- Provide adequate safeguards against unfair or injurious import competition and assist in adjustments to trade flows.
- Open up U.S. market opportunities in nonmarket economies.
- Provide U.S. trade access to less developed countries.

Export-oriented policy. This is a tall



order to fill. However, with a combination of export-oriented domestic policy and cooperation among countries, it is not an impossible one.

Here at home in recent years, the U.S. has begun to apply the same agricultural policies to the international scene that it does to the domestic one. These include: letting commodities be more subject to market forces, lifting production and import restraints on agricultural products, removing barriers that tend to limit consumption; and adopting policies which stimulate food production in food-deficit areas.

"Food for Peace." Another U.S. law concerning agricultural exports is PL-480, or the Food for Peace Program. Started in 1954 as a way to relieve the U.S. of some surplus commodity stocks, the program is geared to help countries which are unable to produce or buy outright all the food and fiber they need.

Under this program, such countries purchase U.S. commodities on a long-term, low-interest payment plan. To be eligible for the program, these countries must have demonstrated that they are attempting self-help measures to meet their own food needs.

Although still an outlet for U.S. farm products, PL-480 shipments have decreased in importance. In fiscal 1976, the Food for Peace exports accounted for less than 5 percent of the more than $22 billion of U.S. agricultural exports, down from a peak of 41 percent of the $4.7 billion worth in fiscal 1957.

International forum. On the world scene, the U.S. belongs to GATT—General Agreement on Tariffs and Trade. Started in Geneva in 1947, the agreement lays down rules for international trade and provides a forum for multilateral negotiations to reduce trade barriers. Currently, there are 83 member countries, with an additional 16 nations participating.

The cornerstone of GATT has been the most-favored nation clause: "that each nation shall grant nondiscriminatory treatment to the products of all other contracting nations with regard to import and export duties and subsidiary charges, rules, and formalities in connection with importation and exportation, and internal taxes and other internal regulations."

Since 1951, the Communist countries, except Poland and Yugoslavia, have not received most-favored-nation treatment. However, in 1975, Romania was declared eligible since it relaxed its restrictive emigration policies.

In addition to the most-favored-nation clause, another of GATT's basic premises is that protection of domestic industries only be done through customs duties.

GATT talks. Currently, the GATT nations are negotiating again in Geneva to achieve a more liberal world trade system. The main goal, as defined in the Tokyo Declaration that opened the latest round of negotiations in September 1973 is to:

> "achieve the expansion and ever-greater liberalization of world trade and improvement in the standard of living and welfare of the people of the world, objectives which can be achieved through the progressive dismantling of obstacles to trade and the improvement of the international framework for the conduct of world trade."

U.S. concern. In the negotiations, the U.S. is focusing on nontariff barriers—to which agricultural products are especially vulnerable. Although tariffs are still used for restricting trade, their average rates have declined. Nontariff barriers, on the other hand, have increased and represent a rising threat to expanding world trade. Such nontariff impediments include variable levies, import quotas, export subsidies, packaging and labeling standards, government procurement practices, customs valuation methods, import licensing requirements, and sanitary regulations.

Common fund. In addition to the GATT negotiations, the United Nations Conference on Trade and Development (UNCTAD) is considering a common fund scheme. The objective of the fund would be to improve the export earnings of less developed countries (LDC's) by attempting to stabilize their commodity prices around a long-term trend, while at the same time boosting the prices higher than they otherwise would be. To achieve this, buffer stocks would be set up for individual "core" commodities—or about three-fourths (valuewise) of the LDC's agricultural exports.

Generally, the U.S. thinks there are other alternatives to the common fund scheme. The U.S. prefers to consider commodities on a case-to-case basis.

A complement to UNCTAD is the Organization for Economic Cooper-

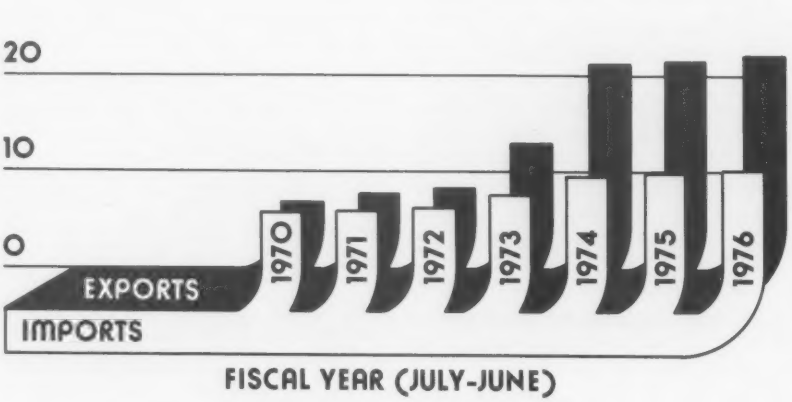
ation and Development (OECD), made up of 24 developed nations, including the U.S. OECD provides a forum for the developed countries to arrive at common understandings on trade problems.

Grain reserves. Another organization dealing with trade-related issues is the International Wheat Council. Currently, the Council is discussing grain reserves—a subject of particular interest since the World Food Conference in 1974. The U.S. position called for an international reserve of grain stocks adequate to offset possible crop failures, but not large enough to interfere with market forces.

Outside the established international organizations, the U.S. also makes trade agreements directly with customer countries. For example, through such understandings, the U.S. has indicated a willingness to sell certain quantities of goods to Japan, Israel, Poland, and Romania.

U.S.-U.S.S.R. agreement. The U.S.-U.S.S.R. grain agreement is another case in point, with a slight twist. Unlike many other countries, the U.S.S.R. gave no prior indication as to how much grain it needed before entering the world market in fiscal 1973. The U.S., able to help meet the Soviet grain needs, negotiated an agreement that would make Soviet purchases less erratic, thus easier for our country to plan for. Specifically, the arrangement states that the U.S.S.R. will purchase a minimum of 6 to 8 million metric tons of U.S. corn and wheat annually for 5 years, starting last October.

U.S. Agricultural Trade



As can be seen from the above outline of U.S. trade policy, the attitude of the 1970's is a far cry from the protectionism and isolationist theories of yesteryear. Gone are such disastrously high tariffs as those of the Hawley-Smoot Act of 1930. In their place are such things as multilateral trade talks and world grain reserve proposals.

Export boon. U.S. agricultural exports are big business today—to the tune of over $22 billion last year. And volumewise, that's more than three times the pre-World War II peak.

The U.S. thrust of world trade expansion has been and will probably continue to be a boon to American agriculture. In the domestic economy, the slowing population rate is likely to dampen the demand for food. But the foreign market, as well as our food supply, has further growth potential.

In addition, a hefty volume of U.S. exports is needed to maintain farm income. At present, American farmers are selling about one-third of their harvests for export.

Expanded agricultural exports also help our country keep a favorable balance of trade. Last year, exports exceeded our agricultural imports by $12 billion. This trade surplus helped our country pay its growing bill for imported petroleum; strengthened the purchasing power of the U.S. dollar; and enabled us to continue buying imported items that have become a part of our lifestyle.

[Based on the article, "Foreign Agricultural Trade Policy of the United States, 1776–1976," by Robert L. Tontz, Foreign Demand and Competition Division, January 10.]

Sheep Enemy No. 1 -- The Coyote

The greatest single enemy western sheep have is the coyote, according to an ERS survey of sheep producers in the western States.

Coyotes, by killing sheep and lambs, may have cost sheepmen and consumers $37 million in 1974. Most of this was lost by farmers and ranchers from reduced sales; but consumers also lost from higher lamb prices and reduced quantities.

Hardest hit by the predators were 5,000 western sheepmen, about one-tenth of all the West's total sheepmen, who lost an average of $4,000 each in 1974.

The survey's data show predators in general were blamed for about half of all lamb deaths in the West in 1974, and a third of the sheep deaths. Coyotes alone were responsible for 35 percent of the lamb deaths. In numbers, coyotes were blamed for killing nearly 730,000 lambs of the 9 million born in 1974.

Signs of attack. Sheep and lamb predators usually leave tell-tale clues on the carcass. For example, a domestic dog will usually kill by slashing at the sheep's hind legs and back; a cougar will bite the top of the head; and an eagle will leave talon marks on the back and head. But the most common finding is bites in the neck of a ewe or lamb —the mark of a coyote.

Sheep producers disagree with environmentalists about the extent of damage caused by coyotes and how they should be controlled. Research sponsored by government agencies and universities also has considered these questions. In 7 biological studies, autopsies were performed on sheep and lamb carcasses to determine cause of death. Verified coyote kills ranged from less than 1 percent of lambs on 7 California ranches with predator control, to 29 percent of lambs on a Montana ranch with no predator control.

Poisons outlawed. At the center of the predator control controversy is the 1972 ban of poisons on Federal land. With nearly half of the West's sheep and lambs grazing on Federal land, the 1972-75 seasons showed the highest rates of lamb loss of any years recorded. According to producers, increased coyote predation was the major cause of this loss.

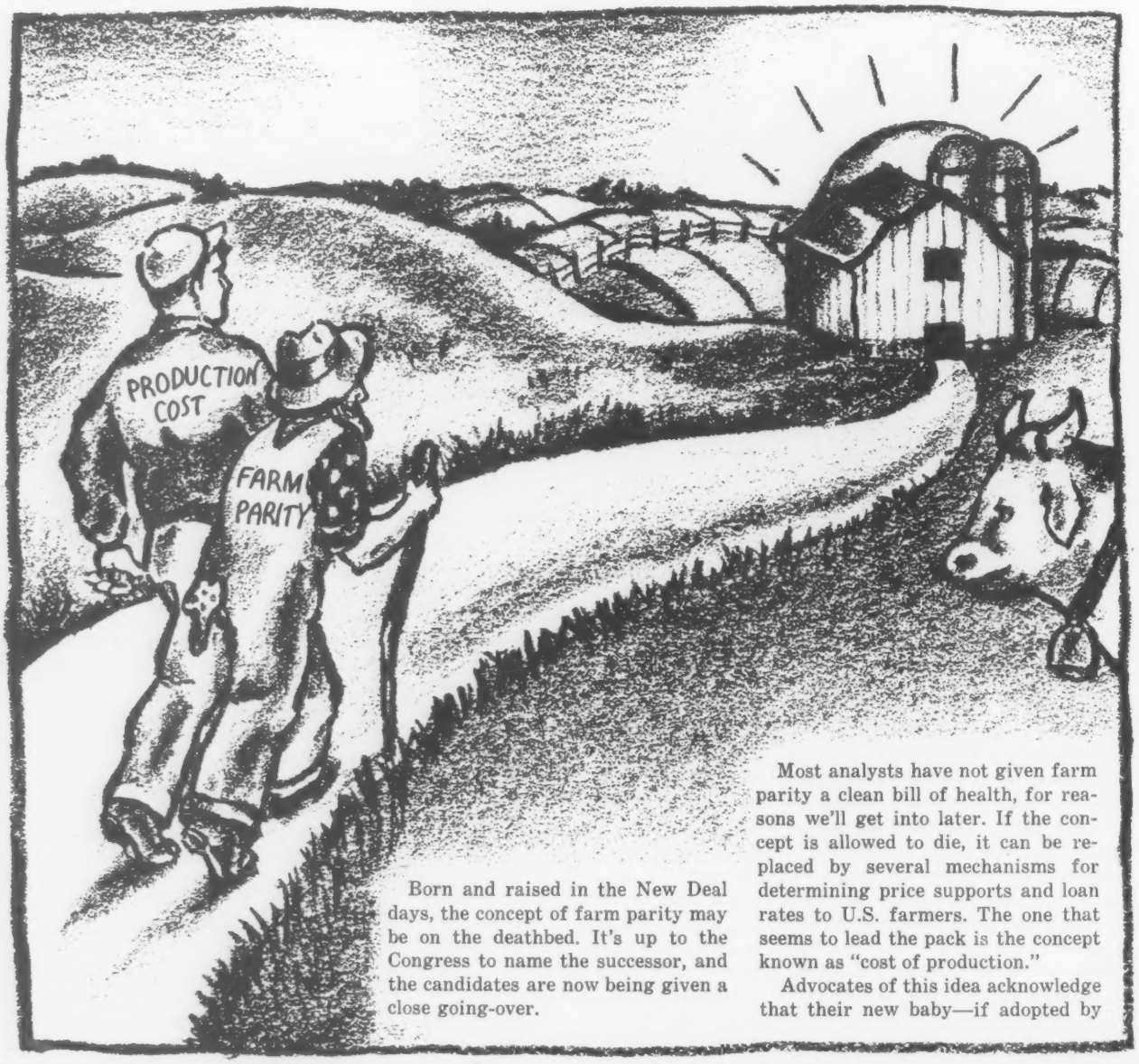
In the study, ERS researchers also report:

- More than half the western commercial sheep producers (those with flocks of 50 or more head) report some losses from coyote attacks.
- Nearly 230,000 adult sheep, in addition to the 730,000 lambs, were killed by coyotes in 1974.
- Disease accounts for less than 2 percent of lamb deaths; weather kills about 4.5 percent.
- Geographically, loss rates of lamb and sheep to coyotes were highest in States with public range grazing and mountainous terrain. Rates were lowest in Plains States.
- Lamb loss rates attributed to all causes have been increasing in the Western States, while loss rates for adult sheep have been declining slightly.

Reports yet to come. There are other questions regarding the issue of predator control, such as how different methods compare as to cost, effectiveness, humaneness, and impact on other wildlife. Future reports will attempt to answer these and other questions, including the reasons behind the reduction in western sheep production. But one factor is already clear: the coyote is the major predator of western sheep.

[Based on "Sheep and Lamb Losses to Predators and Other Causes in the Western United States," by C. Kerry Gee, Richard S. Magleby, Warren R. Bailey, Russell L. Gum, and Louise M. Arthur, National Resource Economics Division.]

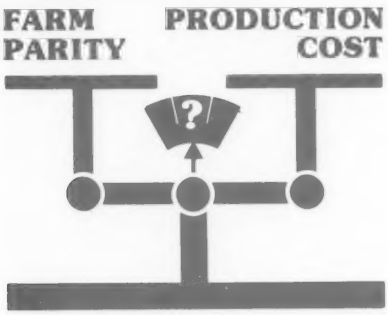
Farm Parity's Rival for Survival



Born and raised in the New Deal days, the concept of farm parity may be on the deathbed. It's up to the Congress to name the successor, and the candidates are now being given a close going-over.

Most analysts have not given farm parity a clean bill of health, for reasons we'll get into later. If the concept is allowed to die, it can be replaced by several mechanisms for determining price supports and loan rates to U.S. farmers. The one that seems to lead the pack is the concept known as "cost of production."

Advocates of this idea acknowledge that their new baby—if adopted by



lawmakers—would have some growing pains. It has its shortcomings, as does the present system. But more so than the price parity concept, a lot of arbitrary decisions would have to be made by those charged with overseeing the program.

Peek on parity. Modern agriculture may have no more use for the parity concept than modern man has for his appendix (some farm spokesmen might argue otherwise), but it made good sense to the followers of George N. Peek. He is generally acknowledged as the father of farm parity, and became the first administrator of the Agricultural Adjustment Act of 1933, which first incorporated the parity notion to help farmers.

Years before the 1933 Act, Peek rallied farm groups to lobby the Congress for legislation to ease the farmer's plight, which was serious.

During the agricultural depression of 1920-21, total value of U.S. farm production plummeted nearly a third because of depressed prices. Farmers went bankrupt while industry (farm machinery, the exception) basked in the sun.

In his pamphlet of 1922 titled "Equality for Agriculture," Peek called for a "fair exchange value" in terms of agricultural prices vs. the general price index. In so many words, Peek said that farm parity was achieved when the average price received by farmers was on a par with the wholesale price index—prices the public paid in a previous period, 1910-14.

Act of 1933. Peek won his case with the passage of the Agricultural Act of 1933. It directed Congress "to reestablish prices to farmers at a level that will give agricultural commodities a purchasing power with respect to articles that farmers buy, equivalent to the purchasing power of agricultural commodities in the base period (1910-14)."

As the decades wore on, it became apparent that the 1910-14 base wasn't in tune with the times. Parity prices, for one thing, were not reflecting new technologies in production and marketing of farm products, nor the changes in consumption patterns here and abroad.

An extreme example is the switch from horsepower to machine power. Demand for oats went down as a result, as did oat prices. Yet the parity price for oats failed to recognize this agricultural revolution. Neither did the parity prices reflect the brighter demand prospects for crops such as soybeans.

Computing parity. As a partial solution, in 1950 the parity formula was refined to use the most recent 10-year prices for individual commodities. The parity price for a particular commodity would be computed as follows:

Divide its most recent 10-year average of prices received, by the average of the Index of Prices Received for the same 10 years; then multiply the result by the current Index of Prices Paid.

Even so, the modified formula did not overcome a basic shortcoming of the parity concept—the reference point for expressing equality between prices received and prices paid remains the 1910-14 base period.

Moreover, the parity price formula is still a price concept. It does not measure cost of production, standard of living, or income parity. It is based on price relationships that are only one component of a farmer's cost of production and income.

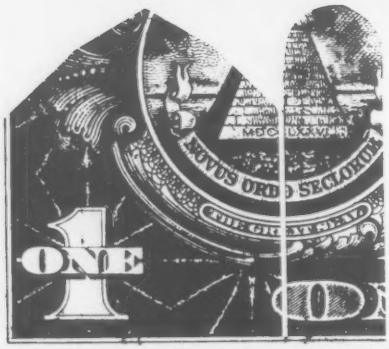
Problems galore. Hence, a web of problems has been the upshot. Among them:

- Since the parity formula is slow to recognize shifts in market demands, price supports based on parity may retard resource adjustment . . . away from commodities in less demand and toward those in greater demand.
- Some commodities turn up in both the prices received and the prices paid accounts, corn being a prime example. Farmers not only grow it, but they also buy it.

A support price based on corn's parity price could be self-escalating. If the support price were raised, then corn's price would push up the parity price in both sides of the ledger (prices paid and prices received), thus starting a cycle that feeds on itself.

- Parity is a national concept; parity prices are not computed by States, for grades, or for specific markets.

Short end of the stick. By definition, the parity price concept is geared to the farmer who produces all the products in the Prices Received Index and buys all the products in the Prices Paid Index. So, we end up with a situation like this: A commodity requiring inputs whose prices happen to advance faster than the increase for all inputs will get the short end of the stick. The parity price for this commodity will not reflect the full impact of the price



increases. And since many commodities are grown regionally, entire regions may be slighted compared to other regions.

There are other objections to the price parity concept. Suffice it to say that many people are unhappy with the status quo, and they are looking at the alternatives. The one which strikes a favorable note of accord at this time is to base the equity of returns to agriculture on production costs.

The trouble with "production costs." Although this proposal has much support, it also has many problems. A fundamental one is: How should production costs be related to the actual price supports? That's yet to be decided, although many ideas have been put forth. Perhaps even more basic is this question: How do you determine production costs in the first place?

As stated in the recent ERS publication *Agricultural-Food Policy Review*:

"To someone unfamiliar with agriculture, the question of estimating farm production costs seems relatively simple. 'Just ask farmers what it costs them to produce a certain commodity.'

"Unfortunately," the report goes on, "major difficulties exist, including: (1) the lack of market-determined price information for the farmer's own labor and management, (2) the problems of computing a cost for use in cropland, and (3) the extremely wide variability in cost of producing a farm commodity across the U.S."

How does one gauge the price of labor and management on the farm? That's easy for most industries—they hire most of their workers and managers. In agriculture, of course, the farm owner works, as do the wife and kids. We know about net farm income. It's the difference between total cash receipts and total cash expenses. But it's something else to try and divide the big pile among family labor, management, machinery, capital, land, the farmer's risk-taking, etc.

Price tag on expertise. Taking labor alone, economists could use the going wage rate for hired workers and apply it to the operator's labor, but that would ignore the quality of his labor and management skills. As to hired tenants, they make day-to-day decisions, but hard to guess is what this supervisory role is really worth and how it should be included in the cost of production.

How do you estimate the "cost" of land?

This question has caught the attention of lawmakers and the news media in recent months, and the topic is crucial to basing assistance to farmers on production costs. Look no further than these statistics: From 25 to 50 percent of all costs to produce crops is chalked up to land costs.

A big problem is that frequently the cost of farmland is set by factors having little to do with agriculture. Land surroundnig towns and cities is bought for urban development; its value in the future is hard to determine.

Hedging inflation. Too, farmland is a good hedge against inflation. If landowners can count on "x" percent a year in appreciation of land values, maybe this should be taken into account when figuring the return to land. By the same token, the interest rate in estimating production costs should be cut the same percentage.

Another fuzzy factor in the farmland value question is assessing the value of tracts sold to family members, land which is often sold below market value to help youngsters get started in farming.

Why not simply assess farmland at what it's worth in the production process? All considered, the ERS economists conclude this may be the best solution. The land's value could be based on what someone else is willing to rent the land for. The hitch is that rental practices are rare for some commodities, especially those raised in irrigated areas.

The third difficulty in the cost of production equation is that the costs vary widely among farms and among regions. How much so is documented in two studies by ERS, made at the behest of the Congress when it passed the Agriculture and Consumer Protection Act of 1973. For the first time in history, the Secretary of Agriculture was requested to conduct cost of production studies.

ERS to the fore. The task fell to ERS researchers who had been doing work in this area since the late 1950's, along with the Land-Grant universities.

What follows comes from the latest ERS report to the Committee on Agriculture and Forestry of the U.S. Senate, published in January 1977.

Again, ERS researchers emphasize that "costs vary significantly over time, from farm to farm, and

COSTS TO PRODUCE SELECTED CROPS: DOLLARS PER PLANTED ACRE*

	1975 (*final*)	1976 (*preliminary*)	1977 (*projected*)
All wheat	68.49	64.49	67.11
Corn	137.13	134.48	137.50
Sorghum	88.96	89.77	93.06
Barley	70.11	69.45	72.20
Oats	48.94	48.14	51.63
Soybeans	83.42	87.62	90.64
Rice	303.33	298.54	313.38
Cotton	214.97	233.19	245.39
Flaxseed	49.84	50.60	53.92
Peanuts	283.89	290.30	308.36

*U.S. averages, including variable costs, machinery ownership, overhead, and management.

across States and regions . . . While the costs shown here are 'average' estimates, the broad range of costs which they encompass should not be overlooked . . ."

The report cites costs of production for 10 major commodities for 1975 and 1976, plus projections for 1977. The figures for 1977 were based on conditions prevailing in late 1976 and may not be applicable to today's situation in all cases. But for the sake of illustrating the disparity in production costs between regions for a few commodities, let's use the 1977 estimates (the national averages for 1975 — 1977 are illustrated elsewhere in this article). All figures to follow exclude the allocation to land.

CORN

The Corn Belt with the Lake States posted the lowest cost per bushel by the 1977 estimates (ranging from $1.40 to $1.54), and the Southeast, the highest ($2.12-$2.44). But in terms of cost per planted acre, the Northern Plains had the lowest —$131.34, versus $136.23 for the Corn Belt and Lake States.

Going back to 1975, the Northern Plains consistently had lower costs per acre than the other four regions in the study. The Corn Belt and Lake States also ranked first in terms of lowest cost per bushel. The Southeast consistently came in last in the per-bushel tally, due to lower yields and higher costs for fertilizers and chemicals.

SOYBEANS

The 1977 projections again gave top honors to the Corn Belt and Lake States in terms of lowest production cost per bushel ($2.62-$2.84), while the Southeast scored the highest cost ($4.40-$4.96).

On the scale of planted acres, however, the Northern Plains outdid the other regions, with the cost per acre estimated at $76.43 against $84.81 in the Corn Belt-Lake States and $108.26 in the Southeast (highest of all regions).

HARD RED WINTER WHEAT

The Northern Plains is projected to have the lowest cost per planted acre this season ($55.95) and the Southwest the highest ($131.91). On a per-bushel basis, the Northern Plains also takes top spot ($1.98-$2.11) for lowest cost production, as does the Southwest for highest cost ($2.28-$2.43). More of the Southwest's land is irrigated, hence, the high cost of production.

These spreads in cost of production among regions indicate the problems in using the cost of production concept as a guide for setting farm price support levels. But even greater may be the differences in production costs among individual farms within a region. Should support rates be based on the lowest cost producers, the highest cost producers, or somewhere in between?

[Based on articles by Forrest Holland, Jerry A. Sharples, and Ronald Krenz, appearing in *Agricultural-Food Policy Review*, ERS AFPR-1, coordinated by J. B. Penn, all with the Commodity Economics Division. Special material was provided by Milton H. Erickson of the same division.]

Wacky Weather Whops Crops

America's tricentennial started out with an unusual gift from Mother Nature—some of the most erratic weather the country has ever known.

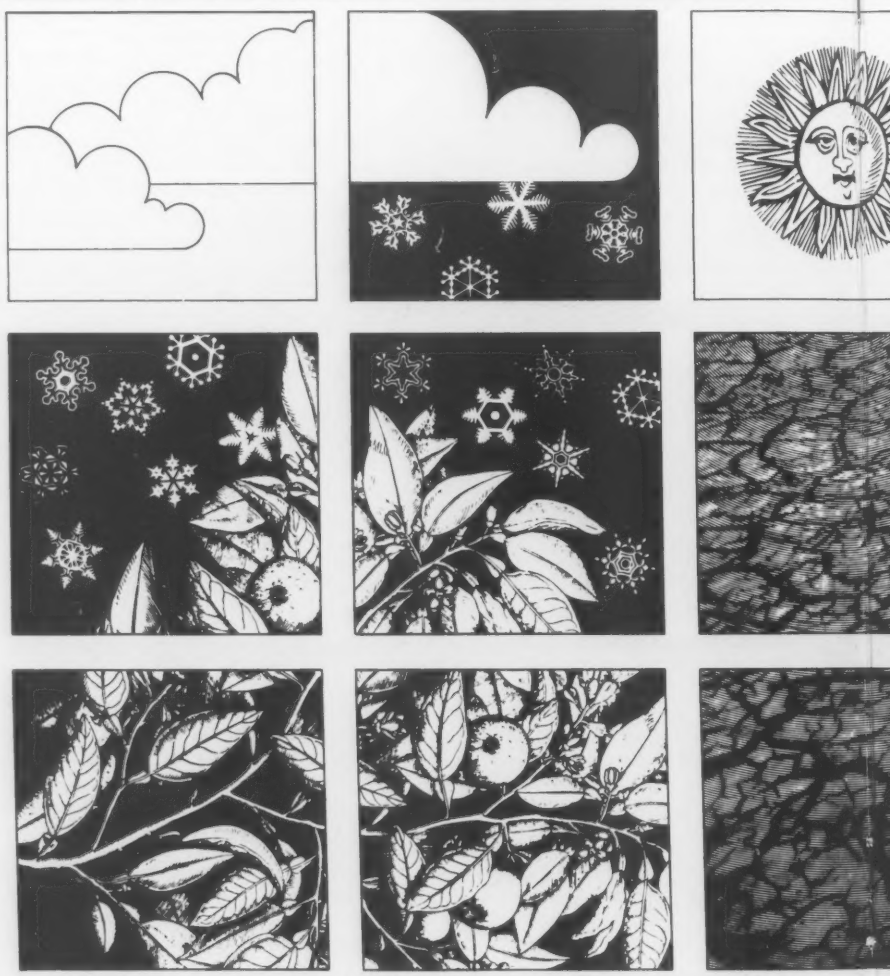
While Floridians were gaping in wonder at the January snow—the first ever reported in some parts—Alaskans were peeling off layers of heavy clothing in the comparatively balmy 40-degree weather and grumbling because their outdoor hockey rinks were melting.

And while the east coast shivered through subnormal temperatures, paralyzing blizzards, and heavy snowfall, Rocky Mountain ski operators complained of the barren slopes and were forced to use snow-making machines.

Far West problems. In the Far West, the second dry winter in a row was compounded by reduced mountain snowpack—a foreboding sign of possible water shortages this summer.

The immediate reason for the mixed-up winter weather was that the high westerly winds, including the jet stream, which normally flow across the country from west to east in winter, were circulating in an unusual pattern. They were cutting across the Rockies much farther to the north than usual, and then, as they headed toward the east coast, they were flowing much farther south than normal.

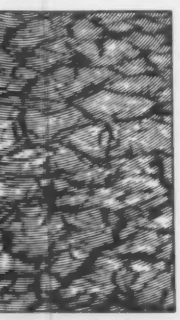
The resulting freeze east of the Rockies and the drought in the West have had serious agricultural impacts. ERS takes a look at the two situations.

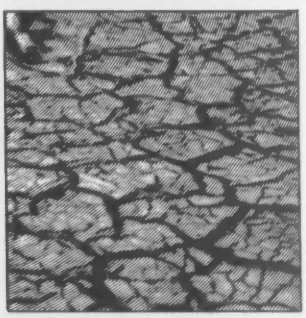


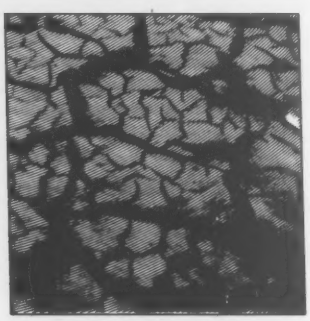
THE FREEZE

Florida's Governor Reubin Askew reacted to the 3-day January freeze by proclaiming his State a disaster area because of damage to citrus and and tender vegetable crops.

Oranges were the hardest hit citrus—in late February the Statistical Reporting Service estimated that 80 percent of the fruit suffered at least some damage. Nevertheless, on February 1, Florida's freeze-damaged crop was still estimated to be larger than the previous year's, although 14 percent smaller than had been expected prior to the bad weather. The sizable Florida crop helped boost total U.S. production 3 percent higher than the 1975/76 total.







Many of the damaged oranges were salvaged for processing use. However, the juice yield may have been down as much as 10 percent, and the pack of frozen concentrated orange juice could range between 170-175 million gallons—down from last season's 186 million.

Orange prices. Before the freeze, grower prices for the season were expected to average well below a year ago because of the larger crop. Now it appears that they may average moderately to substantially above last season's. Retail prices of frozen juice—which shot up immediately after the freeze—continue to vary widely. However, the seasonal price may average about 33 cents per 6-ounce can, compared with close to 29 cents in 1975/76.

Florida grapefruit also took a beating. Production was down 16 percent from the prefreeze estimate, although only slightly less than last season's bumper crop. National production followed the same pattern—down 11 percent from earlier estimates but still somewhat larger than the 1975/76 crop.

Grapefruit loss. Most of the loss of the State's No. 2 citrus crop was due to fruit droppage after the freezing weather, with some weight loss in the processed portion of the crop. Internal damage was not as severe in grapefruit as it was in oranges.

Grower prices for grapefruit are expected to average slightly more than last season's low level. Retail prices for fresh fruit—which escalated after the freeze and will increase seasonally this spring—are expected to remain near year-eariler levels.

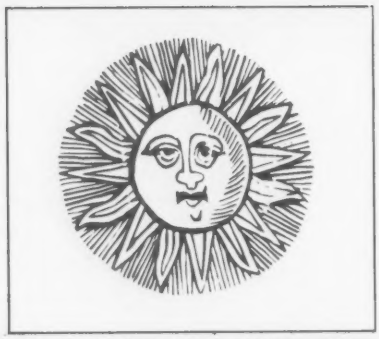
Overall, U.S. citrus production (including California, Arizona, and Texas crops) should total around 15 million tons — about a tenth below prefreeze estimates but still 2 percent larger than last season's big outturn. Despite the damage caused by the freeze, the Sunshine State's crops are mainly responsible for the high production levels, since Florida produced about three-fourths of the entire U.S. crop.

Fresh vegetable situation. Fresh vegetable supplies were expected to be smaller this winter even before the freeze—due mainly to a 5-percent acreage reduction of Texas cabbage and carrots. Under more normal conditions, this cutback would have translated into about a 5-percent drop in vegetable tonnage. But, with cold, wet weather in Texas added to the Florida disaster, the winter harvest was substantially smaller.

Tomatoes, peppers, snap beans, cucumbers, and eggplant were severely damaged by the January chill, forcing the U.S. to import even more winter vegetables from Mexico. (Our southern neighbor usually supplies us with about half the tomatoes and peppers—and more than half the cucumbers—consumed during the winter quarter.) With no imports of fresh snap beans, however, this tender vegetable virtually disappeared in February and much of March.

Market quality loss. The hardier Florida vegetables—cabbage, celery, lettuce, escarole, radishes, and sweet corn—were not destroyed, although there was some loss of market quality.

As a result of the freeze damage in Florida and reduced acreage in Texas, growers received top prices for fresh vegetables in February and March. But now with the beginning of the spring harvest, Florida is again shipping larger supplies of tender vegetables, and grower prices should fall sharply this month.



Bad winter weather also had an impact on livestock, poultry, and dairy markets. The cold wave that gripped the eastern half of the country put a strain on natural gas supplies, and at times livestock and poultry slaughter plants had to temporarily shut down. Also, some dairy plants that manufacture nonfat dry milk had to switch to producing less energy-intensive products, such as condensed skim milk.

Hardships for livestock owners. Many livestock owners—faced with high-priced hay and poor pastures—were unable to meet the additional feeding requirements caused by the harsh winter. More than 330 counties qualified for the emergency livestock feed program by mid-February—almost twice as many as the year before.

Southern and Southeastern producers—who normally graze their stock all winter and don't carry large hay supplies—were forced to ship some thin cattle to feedlots or slaughter that they ordinarily would have kept longer.

While the "Big Freeze" was playing havoc with Florida farmers and the Nation's livestock producers, a potentially more serious threat to U.S. food supplies was shaping up in the West—drought.

THE DROUGHT

Light snowcover this winter over most of the Great Plains and Corn Belt States that were suffering drought forced winter grains to face the cold, drying winds without adequate protection, and in some States the parched, uncovered soil began to blow away in scenes frighteningly reminiscent of the Dust Bowl of the 1930's. (The extent of this year's damage will depend on the rainfall pattern in the coming weeks and months.)

Wheat crop threatened. The Midwest weather posed a threat to the winter wheat crop that was seeded last fall under dry conditions in many areas. And to make matters worse, subnormal temperatures during early November stopped growth over much of the northern winter wheat area before the plants were well developed.

Because the spring wheat growing area was also dry, ERS economists predicted in February that average wheat yields for 1977 might not measure up to last year's yield of 27 bushels per acre—even with normal precipitation through the remainder of the growing season. In addition, winterkill of winter grains was expected to be above normal in the hard wheat areas of the Great Plains and in the eastern half of the country where soft wheat is grown. (An estimate of the 1977 winter wheat crop will be released May 10.)

Huge wheat stocks. However, even though a repeat of last season's bumper crop is not likely, the 1977 crop promises to be a big one. Moreover, America's wheat bins are still bulging with last season's surplus, and wheat stocks may total more than a billion bushels this June—the biggest surplus since the 1960's.

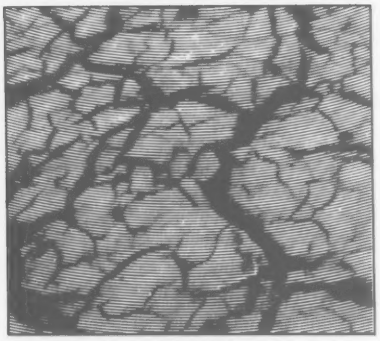
The outcome of the corn and soybean crops depends heavily on spring and summer moisture—especially corn in the western Corn Belt where soil moisture is extremely low.

Even with normal rainfall for the remainder of the growing season, there still may not be enough soil moisture to produce average yields. Above normal precipitation may be needed to attain this goal—with the rainfall timed just right so that planting doesn't have to be delayed because of wet fields.

Hard-hit Pacific States. The drought situation in most of the Pacific States (Washington, Oregon, and especially northern California) has been very bad. Rainfall was only 20-40 percent of normal during the first four months of their rainy season (October through April), and unless unusual out-of-season rains occur, the area will face well below average moisture supplies at least until October.

Both farms and urban areas depend heavily on the water from melting winter snows to carry them through the summer months, but this year mountain snowpack was greatly reduced and reservoir capacities were down to a fourth of normal in some parts. In January upstream water supplies for irrigation ranged from 50-70 percent of normal in the various river basins.

Water cutback. Major areas in California may not have enough water to irrigate this summer—80 percent of the State's water is used for agriculture. The Bureau of Reclamation ordered a 75-percent cutback in water appropriated to all agricultural users in the San Joaquin Valley, except "prior right" users served by the Central Valley project. "Prior right" users in the Glenn Colusa district of the Sacramento Valley were cut 25 percent. The order is subject to change if the drought lifts.



The effect of these reductions may be tempered by more extensive use of groundwater (in 1970 nearly half of all water withdrawn for irrigation was groundwater), and wells are now being drilled or deepened.

Priority to high value crops. With cuts in water deliveries, most farmers can be expected to allocate the available water first to such high value crops as fresh vegetables, with less going to field crops. Yields will also be off for nuts, fruits, rice, and some canning vegetables, such as artichokes and tomatoes.

But the news isn't all bad in California—the State that supplies about a fourth of the Nation's food. In contrast to the northern part of the State, southern California expects such record crops that the effects of the drought will be moderated. So even under the worst of conditions, total output of fresh and processed vegetables will not be off too sharply. However, growers who plant under contract—such as cannery tomatoes—will likely seek higher prices to cover increased costs.

And since the Pacific States, facing short water supplies, account for 55 percent of total domestic fresh vegetable production and 60 percent of processed tonnage, any cut in vegetable output will be reflected through the marketing system. Thus, the economic impact could last until 1978 processing crops are harvested, if the drought is not over soon.

[Based on special material from Orville Krause, Natural Resource Economics Division; Wayne Boutwell, James J. Naive, Robert W. Bohall, Eldon Ball, Joseph C. Podany, and Jules V. Powell, Commodity Economics Division.]

Weather Update

Now that the impacts of the Florida freeze and the harsh east coast winter are generally behind us, the Nation's attention is riveted on the continuing drought in the West.

ERS and others are carefully monitoring the situation, which is expected to affect crop and livestock production this summer and, eventually, food prices.

At press time, the very latest on this extremely fluid situation included the following:

- During early March, flows of some streams in the drought areas had increased—thanks to rain and snowstorms—but most still remained well below normal. (Ground water ordinarily supplies most of the streamflow during dry periods and is often tapped for water supplies. The drought had dropped ground water to record lows in many parts of the Nation this winter, and February streamflows were below normal in 80 percent of the country.)
- Despite the much-needed rains that fell in late February and early March, subsoil moisture reserves remained well below long-term averages throughout the Plains States and the Corn Belt, and extreme drought persisted in northern California.
- So far, wind erosion has not been as much of a problem as it was last year. The Soil Conservation Service studied wind erosion in 347 Great Plains counties from November through February and reported damage to nearly 4 million acres, compared with slightly more than 4.5 million last year. Texas suffered the most damage—nearly a fourth of the total loss.

By the same token, on land not damaged by wind erosion, crops or cover were destroyed on nearly a million acres—down from the approximately 1.3 million acres destroyed during the same 4-month period last year. Most of the damaged crops or cover were located in the southern Great Plains.

Emergency tillage to prevent land damage was reported in every State in the study area, although the Southern States accounted for nearly all of it.

- The drought area's forests are so dry and flammable that several States may have to resort to wide-scale closings to prevent fires. If this happens, functional programs, such as fuel treatment, habitat improvement, road construction, and timber sale preparation, may have to be curtailed.

In addition, closing forests during serious fire danger periods would impact on many forest management operations—harvesting, construction and maintenance, nursery stock production, and reforestation. Recreational activities would also be affected.

- Shortages of water or hydroelectric power could close pulp mills and limit pine sawlog production—either event causing serious economic impacts in the affected area. The Coos Bay pulp mill in Oregon and five California mills have already been affected because of water shortages.
- Present indications are that hydroelectric power production will be significantly reduced in the Western States. Such cutbacks could impact on irrigation pumping, agricultural and forest processing, and the general level of employment.

Changes in Store for Food Marketing

The retail food store is a link between consumers and farmers and is the final step in the world's most productive and efficient system of providing food for a Nation's people.

Industry efforts to improve this final step have produced several promising —and sometimes not so promising— innovations in distribution trucking, warehouse operations, and in the supermarket itself. The following three stories, based on separate ERS studies, look into these aspects.

Findings are based on economic engineering production functions developed by Case and Company, a management consulting firm. The findings reported here assume that major obstacles to achieving the specified efficiency levels, such as capital availability, management skills, employee and consumer acceptance, and so forth, can be overcome.

Adoption of innovations reported here generally requires financial commitment, technical knowledge, and willingness and ability to assume risks by the innovating firms.

Further, because potential cost savings are generally greater for larger operations, adoption rates and resulting benefits likely will accrue disproportionately to the larger firms, strengthening the trend toward fewer and larger firms in grocery wholesaling and retailing.

This does not rule out successful adoption by small firms, but it implies that the likelihood is reduced. Many factors contribute to overall competitive environment and in turn are critical determinants of retail prices, store location, and other factors important to consumers.

Although adoption of innovations reported here have potential for reducing the costs of food distribution, they may also adversely affect industry structure and competitive environment.

All cost savings would not necessarily be passed on to consumers in the form of lower prices. In fact, some costs may be transferred to other participants in the food distribution system. For example in the case of larger stores, consumers may have to drive farther to stores.

Supermarkets

Today's typical American supermarket channels a stream of 3,000 cubic feet of dry groceries to about 5,000 customers each week.

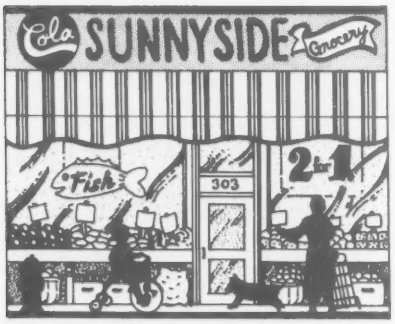
While that volume of business may already seem a bit mind-boggling to anyone who has ever pushed a shopping cart through a supermarket on a Saturday morning, the enticement of operational savings may draw the supermarket industry toward a trend of store sizes that dwarf present supermarkets.

With more efficient operating practices, adoption of new equipment, and store expansion to accommodate a flow of 11,000 to 40,000 cubic feet of groceries per week—and the 16,000 to 65,000 customers needed to consume that flow—the supermarket industry could potentially save up to $.5-1 billion a year. Even under the most favorable conditions, the enormous changes in the structure of food retailing that would be required to realize such savings would take many years.

Six innovations. An ERS comparison of grocery departments of a "typical" conventional supermarket with an efficient "optimum" conventional supermarket shows that savings can be attained through six innovations in the grocery department of the "optimum" conventional store defined in the study:

1. Receive most products on pallets and move them directly to the aisles.

2. Display most items in tray packs (cartons with tops removed), with the remainder in bulk dumps, saving labor costs.



3. Schedule labor according to analytical forecasts of daily man-hour requirements.

4. Use after-hours stocking whenever possible.

5. Cut stocking travel distances by optimizing store layout.

6. Allocate shelf space according to computer analyses of projected item movement and merchandising requirements.

Labor costs. Direct labor saving is the greatest advantage of these innovations. The conventional store is relatively inefficient in the use of direct labor. By using innovations of an optimal operation, a typical store can slice direct labor costs in the grocery department by up to 50 percent. In this study, direct labor costs include receiving products at the store, pricing, and shelf stocking.

Although the optimum conventional store has higher total building and fixture costs, the reduced labor costs more than offset the expense of the investment. An optimum conventional store would have roughly 35 percent higher floor and fixture costs in the grocery department than a typical conventional store, if each moved a volume of 11,000 cubic feet of groceries per week. At 40,000 cubic feet per week, the gap would narrow to 24 percent. At 3,000 cubic feet per week volume—the current typical size—the optimum operation would have 58 percent higher building and fixture costs in the grocery department than a conventional supermarket of the same size.

Optimum operation saves. If direct labor costs (excluding checkout and overhead labor) are combined with floor and fixture costs, the optimum operation would cost 36 percent less at a volume of 11,000 cubic feet per week, and 42 percent less at 40,000.

The study also considered a third type of outlet which has not caught on in the U.S.: the "super store" with bins, which appears to be spreading in Europe. It handles from 11,000-40,000 cubic feet of dry groceries each week—a volume far greater than most large American supermarkets.

Using the six innovations that characterize the optimum supermarket operation, the super store also receives and stocks high volume items in bins with 7- and 23-cubic foot capacities. Full bins are moved to the sales floor in stacks of 2 or 3 by forklift. There, they are placed in reserve storage above display racks, then lowered to the racks as needed. The fronts of the bins fold down to allow customer selection.

Super stores. The super store with bins requires that individual items be prepriced and packed in bins (e.g., by food processors) prior to shipment to the stores. The effects of this procedure on costs and operating practices of other participants in the distribution system were not studied.

Despite the enticement of the prospective savings of between 1 to 2 percent of grocery sales volume by adoption of the optimum conventional supermarket—or even super store—methods, several restraints may cause the innovations to be slow in taking root.

While, in the long run, the methods could generate savings equal to 1 or 2 percent of dry grocery sales, in most instances new buildings and equipment are necessary for the change. Since only 5 to 10 percent of all U.S. supermarkets are built or remodeled each year, several years must pass before optimum conventional stores become prevalent.

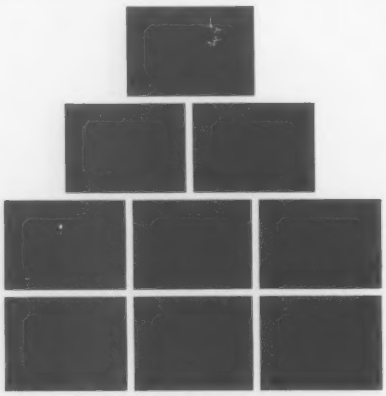
Capital and customers. As for super stores, which could save as much as 10 to 20 percent more than optimum conventional stores, the necessity for a large capital investment and a huge volume of customers may hamper adoption in the U.S.

While a typical 3,000-cubic-foot-per-week conventional store needs 5,000 customer equivalents per week to operate successfully, a 40,000-cubic-foot-volume super store must have 65,000 customers. Considering that the super store must compete with other stores, the market area would have to contain a population of far more than 65,000 people; thus the super stores may be limited to larger metropolitan areas.

Unanswered questions. Adoption of the innovations and the move to fewer larger stores appear to offer significant opportunities for reducing food retailing costs. But there are many unanswered questions as to how this would affect business conduct and competition and how it would affect consumers, e.g., prices, access to stores, and increased travel costs.

[Based on the paper, "Cost Comparisons of Grocery Departments in Conventional Supermarkets and Super Stores with Implications for Training," by Gerald Feaster, Gerald Grinnell, and Terry Crawford, National Economic Analysis Division, presented at the annual meeting, Food Distribution Research Society, San Antonio, Tex.]

Warehousing



A new day of mechanization is dawning for grocery warehouses with the advent of expensive but efficient equipment.

Yet, ERS researchers conclude that probably only 50 of the Nation's 600 grocery warehouses can justify advanced mechanization now, with another 150 operations possibly eligible for adoption of small-scale mechanization equipment.

For many operations, the new equipment offers an agonizing dilemma: The large investment required may not be recouped in the short run, yet rising labor costs may make mechanization necessary in a decade or so. Although they can ill afford to make the $3.7 million outlay for full mechanization, equipment costs may be much higher in coming years.

The squeeze. As larger warehouses mechanize and expand to recoup their investments, small, nonmechanized operations may face a dangerous margins and cost squeeze.

The mechanization squeeze may offer a bleak outlook for many grocery distributors who operate with relatively small profit margins and high financial leverage. Researchers suggest that they could be faced with liquidation or merger when competitive conditions tighten, even for relatively short periods.

The ERS study compared conventional warehouse operations with batch-pick-to-conveyor and vending-type warehouses.

Selection processes. A batch-pick-to-conveyor operation selects cases manually (orders for five stores are picked simultaneously), then places them on a conveyor that takes them to staging areas at loading docks. In vending warehouses, case selection is fully automatic.

The study found that batch-pick and vending warehouses were not feasible when weekly throughput was only 100,000 cases, even with wages as high as $12 per hour.

At 200,000 cases per week with wages at $12 per hour, vending-type warehouses netted a 7 percent return on their incremental investments, while batch-pick operations attained an 11-percent return on the additional investment over conventional operations.

Investment return. With an output of 500,000 cases per week, return on incremental investment for a vending warehouse ranged from 10 to 27 percent, while batch-pick warehouses gave 21 to 45 percent returns depending on wage rates.

In short, mechanization becomes increasingly feasible as wage rates and level of output increase.

Conventional warehouse operators may find comfort in one finding: They may close much of the competitive gap by adopting partial automation, and by reorganizing warehouses and operating practices.

Researchers made these suggestions for conventional warehouse improvements:

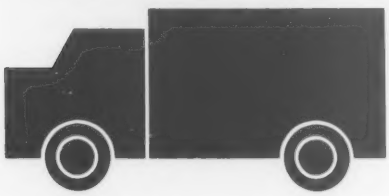
- Segregate slower moving items to the rear of the warehouse and halve the selection rate of these items. Result: Total labor costs are trimmed 2 percent.
- Select 4 store orders simultaneously, thus reduce selection time by 10 percent.
- Use pick slot runners and flow racks to reduce replenishment and selection costs.
- Increase managerial and organizational discipline to increase productivity and efficiency.
- Newly introduced equipment designed for relatively small warehouses may be feasible to partially mechanize larger operations.

The need to tighten an operation and mechanize is reflected in projected wage increases. If wages increase 7 percent annually, by 1986 wage rates would range from $15 to $23 an hour (including fringe benefits).

Facing such labor costs, firms are likely to put increased amounts of mechanized equipment into new grocery warehouses.

[Based on the paper, "Economies of Size by Level of Mechanization in Dry Grocery Warehouses with Implications for Market Performance," by Gerald E. Grinnell, Terry L. Crawford, and Gerald Feaster, National Economic Analysis Division, presented at the annual meeting, Food Distribution Research Society, San Antonio, Texas.]

Transportation



Transportation costs paid to common carriers account for over 5 cents out of every food dollar spent by consumers and this doesn't include additional costs incurred by firms doing their own trucking.

Transportation is a good place to look for cost savings, particularly in view of rising fuel costs that have contributed to a 28-percent increase in travel costs in the past 2 years.

Analysts conclude that adoption of three innovations could reduce costs by a modest .3 percent of consumer expenditures, with substantial additional savings possible in specialized situations through more efficient operations.

Innovations studied are:

- Backhauling, which can reduce costs by about 2 cents per case if firms with less than average backhauling increase backhauls to the median number of loads currently being backhauled by firms in the industry. Backhauling means using the truck's capacity to haul goods on the return trip.
- Piggybacking for long hauls, which can save a substantial 18 to 20 cents per mile where rail service exists. Piggybacking is the use of rail transportation for trailers. Savings in piggybacking will increase as fuel prices rise.
- Use of lighter aluminum bodies or parts could add a savings of 1 cent per mile for each 1,000 pounds of reduced weight.
- Wind deflectors on trucks, which can save 1 to 2 cents per mile in fuel cost when the average speed is more than 40 miles per hour.

Movement costs. While these innovations generally apply only to movement of goods from wholesale to retail centers, that part of the transportation system accounts for a third of the amount that the consumer pays for transportation.

Transportation costs may be separated into stop costs and travel costs.

Travel costs consist of expenses for equipment, fuel, drivers' labor, and other costs associated with the actual movement of goods. Stop costs include labor costs associated with loading and unloading.

The study examined transportation costs associated with four systems for delivering groceries to stores: Route delivery by manufacturers using 20-foot vans, bulk delivery by manufacturers using 34-foot vans, delivery from a retailer's warehouse using 40-foot trailers, and delivery from a retailer's warehouse using 45-foot trailers.

Large trailers' edge. Travel costs ranged from 55 cents per mile for route direct delivery to $1.02 per mile from the warehouse using a 45-foot trailer. Yet, on a per unit basis, costs were .2 cents per cubic foot per mile for route delivery and only .05 cents per cubic foot mile for the 45-foot trailer.

The 34-foot van used roll-on/roll-off racks which increase handling efficiency but reduce space utilization. Despite a 16-cent-per-mile higher operating cost, the large van operating at only two-thirds capacity can achieve the same unit costs per case as the smaller van operating at full capacity.

Use of 40-foot and 45-foot trailers in distribution through warehouses also shows advantages of a larger trailer, which, if filled to capacity, offers a 20-percent savings in travel costs and a 9-percent saving in total operating costs.

Stop costs savings. For short hauls (under 50 miles) at 60 to 70 percent of load capacity, higher travel costs for the large trailers can be more than offset by savings in stop costs that can be achieved through unitized handling methods, such as palletization. Net savings for a 40-foot trailer in such circumstances could be 12 cents per case on short hauls.

Even larger savings could be realized on long hauls (150-200 miles). For a 40-foot trailer, use of optimum handling methods can reduce transport costs by 22 cents per case.

Although the study examined only existing innovations, the researchers suggested that still greater savings may be possible through devising means of reducing labor expenses, which now account for half to two-thirds of transportation costs, and fuel consumption, which is the second most costly item.

[Based on the paper, "Cost and Innovations in Distribution Trucking," by Terry L. Crawford, Gerald Feaster, and Gerald Grinnell, National Economic Analysis Division, presented at the annual meeting of the Food Distribution Research Society, San Antonio, Texas.]

Commodity Profile

Feed Grains: Looking to the Feedlot

The American farmers' response to surging world demand for feed grains has been record-shattering production.

Increases in individual incomes have boosted demand for meat and poultry, which in turn has meant greater demand for feed grains, both worldwide and domestically.

Americans consumed 155 pounds of red meat per capita in 1976 (retail-cut equivalent), up from 134 pounds per capita in 1960. Likewise, poultry consumption was up to more than 53 pounds per capita in 1976, compared with 34 pounds in 1960.

Eating more meat. Foreign demand for meat and poultry has also increased, causing a rising demand for American feed grains. U.S. feed grain exports surged from 27 million short tons in 1971/72 to a record 55 million in 1975/76.

To meet that domestic and foreign appetite, U.S. farmers last year produced a record 212 million tons of feed grains—corn, sorghum, oats, and barley.

Corn was the most-produced feed grain, as usual, with 6.2 billion bushels in 1976 accounting for about four-fifths of the feed grain output. Corn production broke a record set in 1975, and cracked for the first time the 6-billion-bushel threshold.

Where to grow. Production costs, yields, and the price outlook are important considerations for farmers in determining the crops to be planted. But some regions are specialized in certain of the feed grains because of climate. Corn is the most prevalent feed grain in the Midwest; sorghum predominates in the drier Central Plains and arid Southwest; oats are a northern crop; and barley is grown largely in the Northern Plains, the Pacific Northwest, and California. Still, each of the feed grains is grown in some quantity in all parts of the Nation.

Growing more. Plantings have increased in the last few years. With the increased demand, plantings of feed grains jumped from 115 million acres in 1972 to 129 million acres in 1976. A third of the crop acreage in the U.S. is planted to the four feed grains.

The increases in feed grain production and prices boosted the total dollar value of the crops. They jumped from $5.5 billion in 1964 to an $18 billion average annually during 1973-75 (excluding Government payments). In recent years, a little more than a third of the feed grain production was used on the farms where grown. The remainder was marketed, with two-fifths of that amount exported.

The bottom line. Events of recent years have had an impact on the prices of feed grains as well as most other commodities. Prior to the 1972 crop year, the season average price received by farmers for corn generally ranged from $1.10 to $1.25 a bushel. More recently, the season average price received by farmers was $3.03 a bushel in 1974/75, following the relatively small crops of 1974. Since then, prices have eased as production recovered to more normal levels, averaging $2.54 a bushel in 1975/76. Average prices in 1976/77 are expected to be slightly lower.

Unstable prices have added a troublesome new dimension to the likestock and poultry feeding business. Commercial grain producers rely heavily on these feeders as their main customers, and while grain pro-

ducers have often benefited from price changes since 1972, livestock feeders have often suffered. Feed prices at times were high in relation to prices for slaughter animals, and losses from feeding have resulted.

Changing the game. Prior to 1972, U.S. feed grain prices had been low and fairly stable. Supply was more than adequate to meet needs. But when foreign trade for U.S. feed grains increased dramatically, the situation changed, and the feeders and producers entered "a whole new ballgame."

Since that time, too, farmers' costs of production have increased. The cost of inputs derived from petroleum and natural gas—such as diesel fuel and fertilizer—have increased sharply. Like everyone else, farmers must pay more for nearly everything they buy.

These two factors—price instability and costlier production inputs—make it difficult for U.S. livestock feeders and producers, and feed grain producers, to plan ahead.

Shipping out. They have to take into account not only prices, but foreign demand for feed grains and that impact on the marketplace.

Exports account for about 25 percent of the total feed grain demand in the U.S. This country handles about three-fifths of the world trade in feed grains, shipping to over 100 countries. Big buyers include Western Europe, Japan, and the Soviet Union.

The competition. Even though the U.S. has the lion's share of the world feed grain trade, many other countries export feed grains, too. Top competitors of the U.S. are Canada and Argentina. Brazil and Thailand are increasing export volumes, and both may provide increasing competition for American feed grains in the years ahead. For the time being, however, their exports are relatively small.

Despite the increased trade, the domestic market still consumes about 75 percent of feed grain disappearance to keep up with the rising meat, milk, egg, and poultry needs of a growing population.

[Based on material compiled by the Grains and Feed Program Area, Commodity Economics Division; and on special material from Corinne LeBovit, National Economic Analysis Division.]

COMMODITY PROFILE: FEED GRAINS

Production: U.S. farmers produced 212 million tons in 1976, a record, but projections for a repeat performance are highly tentative because of adverse weather in many parts of the Nation through the winter.

Acres planted: 129 million acres in 1976

Exports: About one-fourth of U.S. feed grains are exported. The U.S. production accounts for 55-60 percent of the world trade.

Domestic use: Nearly two-thirds of U.S. feed grains are grown for sale to feedlots and other livestock feeders. About one-third of the grains are used on the farms where grown.

Trends: The demand for feed grains will probably increase worldwide, as incomes and standards of living go up. This growth, plus the entrance into the world market of more nations that export feed grains, could mean greater competition for U.S. growers.

Recent Publications

Single copies of the publications listed here are available free from The Farm Index, Economic Research Service, Rm. 1664-So., U.S. Department of Agriculture, Washington, D.C. 20250. However, publications indicated by (*) may be obtained only by writing to the experiment station or university. For addresses, see July and December issues of The Farm Index.

The U.S. Farmer in the International Food Situation. Quentin M. West, Administrator. ERS-651.

Wide variations in world grain production and other economic factors have given U.S. farmers a larger stake in the international food situation than they have ever had before. This report reviews the events that have shaped the current world food situation and their impact on U.S. farmers, with a perspective on the new Federal farm legislation to be drafted this year.

Mechanical Harvesting and Packing of Iceberg Lettuce. Stanley S. Johnson Commodity Economics Division. AER-357.

Using mechanical-harvesting systems for lettuce harvesting may result in small financial savings for growers. The two hand-cut systems—one involving mechanical devices to aid in wrapping the lettuce, the other leaving the lettuce unwrapped—are still in wide use in the U.S. This report compares the hand systems with the mechanical systems, relative to costs and productivity.

Revision of the U.S. Department of Agriculture's Nonreal Estate Farm Debt Series, 1962-75. Philip T. Allen, National Economic Analysis Division, ERS-647.

Estimates of farm debt were lowered substantially by revisions of the "individuals and other" (I&O) component of the nonreal estate debt series. The estimate for January 1, 1975 of I&O debt was revised downward by $10.6 billion, from $16.7 billion to $6.1 billion. Total nonreal estate debt on January 1, 1975 was estimated at $35.2 billion. This report details the nonreal estate debt.

Cotton: Comparisons of Modified Flat and Universal Density Presses. Dale L. Shaw and Joseph L. Ghetti, Commodity Economics Division. AER-359.

The use of a universal density press, as opposed to a modified flat bale press, may be of economic value to cotton gin operators, according to this comparison of the two systems. The study was based on a survey of 18 gins with universal density presses and 16 with modified flat bale presses. The gins were located in California, Arizona, West Texas, and the Louisiana-Mississippi Delta during the 1973/74 season.

Food Consumption, Prices, and Expenditures. National Economic Analysis Division. AER-138.

This book of tables updates *Food Consumption, Prices, and Expenditures*, issued July 1968. The data in the new tables are reported as of August 1976. Some information which cannot be updated has been dropped in the latest report, while new information — an estimated breakdown of food expenditures at home and away from home, for example—has been included.

Agriculture in the United States and the Soviet Union. Fletcher Pope, Jr., Foreign Demand and Competition Division. FAER-92, revised January 1977.

While agricultural production in the Soviet Union is about 80 percent of the output in the U.S., the Soviet farm system remains far less efficient than its American counterpart. While more than a fourth of the Soviet labor force (which is 50 percent larger than the U.S. labor force) is engaged in agriculture, only 4 percent of the U.S. workers are in agriculture. In the end, the Soviets are net importers of agricultural products, while the U.S. is a net exporter.

Sugar Policy Options for the United States. Edward V. Jesse and Glenn A. Zepp, Commodity Economics Division. AER-351.

Comparing consumer and U.S. Treasury costs, this report examines the probable impact of alternative U.S. sugar policy positions on U.S. sweetener producers, processors, and consumers. Two fundamental questions are addressed: Would participation in a free world market for sugar jeopardize the existence of a viable U.S. sugar industry? If an overt domestic protectionist policy is deemed desirable for any reason, what are the likely costs of selected policy options?

Economic Trends

[1] Ratio of index of prices received by farmers to index of prices paid, interest, taxes, and farm wage rates. [2] Average annual quantities of farm food products purchased by urban wage earner and clericalworker households (including those of single workers living alone) in 1959-61—estimated monthly. [3] Annual and quarterly data are on 50-State basis. [4] Annual rates seasonally adjusted fourth quarter. [5] Seasonally adjusted. [6] As of March 1, 1967. [7] As of March 1, 1975. [8] As of February 1, 1976. [9] Beginning January 1972 data not strictly comparable with prior data because of adjustment to 1970 Census data.

Source: U.S. Dept. of Agriculture (Agricultural Prices, Foreign Agricultural Trade and Farm Real Estate Market Developments); U.S. Dept. of Commerce (Current Industrial Reports, Business News Reports, Monthly Retail Trade Report and Survey of Current Business); and U.S. Dept. of Labor (The Labor Force and Wholesale and Consumer Price Index).

Item	Unit or Base Period	1967	1976 Year	1976 Jan.	1976 Nov.	1977 Dec.	1977 Jan.
Prices:							
Prices received by farmers	1967=100	—	186	186	173	179	183
Crops	1967=100	—	198	191	187	191	198
Livestock and products	1967=100	—	177	183	162	169	170
Prices paid, interest, taxes and wage rates	1967=100	—	192	189	192	193	198
Family living items	1967=100	—	176	172	180	181	182
Production items	1967=100	—	193	190	191	193	196
Ratio [1]	1967=100	—	97	98	90	93	92
Wholesale prices, all commodities	1967=100	—	182.9	179.3	185.6	187.1	188.0
Industrial commodities	1967=100	—	182.3	177.3	187.0	187.4	188.4
Farm products	1967=100	—	191.1	192.8	183.6	191.6	193.5
Processed foods and feeds	1967=100	—	178.0	179.4	174.8	179.0	179.3
Consumer price index, all items	1967=100	—	170.5	166.7	173.8	174.3	175.3
Food	1967=100	—	180.8	180.8	181.1	181.7	183.4
Farm Food Market Basket: [2]							
Retail cost	1967=100	—	175.4	178.5	173.1	173.0	174.3
Farm value	1967=100	—	178.8	186.3	168.2	171.5	175.0
Farm-retail spread	1967=100	—	173.2	173.6	176.2	174.0	173.9
Farmers' share of retail cost	Percent	—	40	40	38	38	39
Farm Income: [3]							
Volume of farm marketings	1967=100	—	121	124	157	139	125
Cash receipts from farm marketings	Million dollars	42,817	94,793	8,103	9,811	8,503	8,400
Crops	Million dollars	18,434	47,802	4,259	6,013	4,808	4,800
Livestock and products	Million dollars	24,383	46,991	3,844	3,798	3,695	3,600
Realized gross income [4]	Billion dollars	49.9	104.2	—	—	100.9	—
Farm production expenses [4]	Billion dollars	38.2	80.9	—	—	80.6	—
Realized net income [4]	Billion dollars	11.7	23.3	—	—	20.3	—
Agricultural Trade:							
Agricultural exports	Million dollars	6,380	—	1,994	2,121	—	1,907
Agricultural imports	Million dollars	4,452	—	818	972	—	1,133
Land Values:							
Average value per acre	Dollars	168[6]	403[8]	—	445	—	—
Total value of farm real estate	Billion dollars	182[6]	421[8]	—	467	—	—
Gross National Product: [4]	Billion dollars	796.3	1,691.4	—	—	1,744.3	—
Consumption	Billion dollars	490.4	1,079.7	—	—	1,122.0	—
Investment	Billion dollars	120.8	239.6	—	—	242.8	—
Government expenditures	Billion dollars	180.2	365.6	—	—	376.2	—
Net exports	Billion dollars	4.9	6.4	—	—	3.3	—
Income and Spending: [5]							
Personal income, annual rate	Billion dollars	626.6	1,375.3	1,320.8	1,421.4	1,439.5	1,443.3
Total retail sales, monthly rate	Million dollars	26,151	54,308	51,592	55,573	57,741	56,600
Retail sales of food group, monthly rate	Million dollars	5,759	11,750	11,433	11,044	11,384	11,206
Employment and Wages: [5]							
Total civilian employment	Millions	74.4	87.5	86.2	88.2	88.4	88.6
Agricultural	Millions	3.8	3.3	3.3	3.2	3.3	3.1
Rate of unemployment	Percent	3.8	7.7	7.8	8.0	7.8	7.3
Workweek in manufacturing	Hours	40.6	40.1	40.4	40.1	40.0	39.7
Hourly earnings in manufacturing, unadjusted	Dollars	2.83	5.19	5.02	5.34	5.42	5.44
Industrial Production: [5]	1967=100	—	129.8	125.7	131.7	132.8	131.5
Manufacturers' Shipments and Inventories: [5]							
Total shipments, monthly rate	Million dollars	46,487	98,552	94,067	100,596	105,277	—
Total inventories, book value end of month	Million dollars	84,527	166,856	156,120	167,114	166,856	—
Total new orders, monthly rate	Million dollars	47,062	98,901	92,822	101,461	107,634	—

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